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"Impact of Eco-Badging in Digital Advertisements on Consumer Purchase Intentions Towards Ethical Cosmetics"

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Abstract
The increasing significance of environmental sustainability and ethical consumption has had a substantial impact on marketing strategies in the cosmetics sector. Eco badging in digital ads has emerged as a crucial mechanism in conveying environmental responsibility and product authenticity to consumers. This study seeks to investigate the effect cosmetics, examining how such labels influence consumer perception, trust and decision making behaviour.
Following established review guidelines, we followed a systematic literature review approach, including recent peer-reviewed studies published between 2015 and 2025. We identified key research trends and relationships using bibliometric and thematic analysis techniques. The review covers three main research streams: the influence of eco-labels on consumer trust and credibility, the impact of digital advertising on consumer engagement, and the factor that determine purchase intention towards ethical and sustainable cosmetics products. The selected studies are from different regions of the world :Europe, Asian and North American, and employ different method such as surveys, experimental designs and structural equation modelling.
The results show that eco-badging positively affects consumers purchase intention through enhancing perceived product authenticity, environmental awareness and brand trust. However, the effectiveness of eco-labels is subject to factors such as credibility, clarify of information and consumer scepticism towards greenwashing. Digital advertising platforms also allow for interactive and personalised communication that amplifies the impact and reach of eco-labels. Ethical cosmetics are attracting increasing interest, but price sensitivity, lack of awareness and limited trust in certification schemes can limit actual purchase behaviour.
The study concludes that eco-badging is vital to promoting ethical cosmetics in digital advertisements. Still, its success depends on transparent communication, reliable certification and effective digital engagement strategies. These findings have significant implications for marketers and policy makers with the goal of promoting sustainable consumption in the cosmetics industry.
In addition, this paper focuses on the importance of eco-labelling as a strategy to gain competitive advantage for SMEs and startups in the Asian market, where the role of digital platforms in shaping brand strategies for sustainability become vital.

Keywords: Eco-badging, Digital advertising, Consumer purchase intention, Ethical cosmetics, Sustainable marketing, Green consumer behaviour

1. Introduction

The growing global focus on environmental sustainability and ethical consumption has significantly influenced consumer behaviour and marketing practices (Joshi and Rahman, 2015; Chekima et al., 2026). Recently, industries have been pressured to develop sustainable strategies to respond to environmental challenges and changing stakeholder expectations (Peattie and Crane, 2025). Among these, the cosmetics industry has attracted special interest due to environmental impact, use of harmful ingredients, and ethical issues like animal testing. Hence, there is a tremendous increase in the demand for ethical cosmetics that is environment friendly, cruelty free and sustainable products (Kumar and Ghodeswar, 2015)

Eco-badging, also known as eco-labelling, has become a key tool in the area. Eco-badges are certifications or symbols that provide information about the environmental and ethical qualities of products. Their goal is to reduce information gaps and build consumer trust (Thogersen et al.,2010; Horne,2009). Previous studies show that eco-labels can positively affect consumer views, attitudes, and buying intentions by signalling trustworthiness and environmental responsibility (Thogersen et al., 2010). However, the success of eco-badging depends on factors like label trust, consumer awareness, and perceived authenticity (Leonidou and skarmeas, 2017).

The addition of eco-badging to digital ads increases its potential impact. Digital platforms allow for the strategic placement of eco-labels within eye-catching and targeted advertisements. This boosts their visibility and persuasive power (Dwivedi et al., 2021). However, the rise in sustainability claims has also caused more consumer scepticism, especially regarding greenwashing. This can damage trust and

lessen the effectiveness of eco-badging strategies (Delmas and Burbano,2011; Leonidou and skarmeas, 2017).

In relation to Asia, the cosmetic industry is growing at a fast rate owing to the rise in awareness regarding the environment, the adoption of technology, and changes in consumer behaviour. India, China, and South Korea are examples of some countries where ethical cosmetics can be seen as having huge potential for growth. It is also importance to note that the industry is dominated by SMEs and entrepreneurs who rely on digital marketing to get their products to consumers. Eco-bagging servers the purpose of differentiation for them

Although there is an increased amount of studies focusing on green marketing, eco-Labelling and digital marketing, many of the existing studies have often looked at each factor separately (Peattie and crane, 2005). There is not much research that has tried to systematically identify the influences of eco-badging through digital marketing on purchase intentions, especially as regards ethical cosmetics' There is clearly a need for synthesizing current research and understanding important factors at work here

Thus, this study employs a systematic literature review (SLR) methodology to critically evaluate and synthesize the existing body of literature regarding the effects of eco-badges in online ads on consumers' purchase intentions for ethical cosmetic products. Through the identification of recurring themes, emerging trends, and literature gaps, this study seeks to present a coherent framework for the influence of eco-badges on consumer behaviour and decision-making

2. Theoretical Background

This study is based on theoretical foundations that have been developed around consumer behaviour, green marketing, and digital communication, which together provide insight into how eco-bagging in digital adverting affects the purchasing decisions of consumers regarding's ethical cosmetics (Joshi and Rahman, 2015; Dwivedi et al., 2021)

Theory of Planned Behaviour (TPB) is one of the key theories that guide the process of conducing this study. As per TPB, people's behaviours are a function of their intention to engage in a certain behaviour, which depends on their attitudes, subjective norms, and perceived behavioural control (Ajzen,1991). In the case of ethically produced cosmetics, consumers' attitudes toward green products, societal influence, and ease of buying the products are positively correlation with consumer's purchase intention (Paul et al., 2016). Use of eco-certifications through digital marketing can boost consumers attitudes towards green products (Thogersen et al., 2010).

Another useful theoretical framework to consider in this case is the signalling Theory. This theory describes the use of signs such as labelling certification, and Brading by producers to minimize information asymmetry between themselves and consumers (Spence, 1973). Eco-badges represent an example of signals conveying the environmental and ethical features of cosmetic products, and allowing consumers to make well-informed choices about purchasing a products or not (Horne, 2009). The usage of eco-badges in digital advertisements will have a strong impact on consumer perception and decision making processes (Kumar and Ghodeswar, 2015)

The Elaboration Likelihood Model (ELM) theory can also help us understand the role of ads in consumers perceptions. As proposed by ELM theory, information is processed using two types of routes which relies on the careful assessment of information and a peripheral routes which relies on peripheral cues such as pictures and symbols (petty and Cacioppo, 1986). Eco-badges within online ads can be used as peripheral cues, affecting consumer judgment in an instant when their attention is short lived or when they do not pay much attention (Leonidou and Skarmeas 2017)

Consumer Trust and perceived value is another important theme of this study. The importance of trust in eco-labelling and online advertisement cannot be understated since it is a key driver behind consumer perception and purchase intention (Chekima et al., 2016). If the eco-badge is considered trustworthy by the consumer, it will contribute to increased perceived value (Kumar and Ghodeswar, 2015). However, it there is doubt about the green claims made by a company, its eco-badging strategy might not work (Delmas and Burbano, 2011).

Moreover, the theory of Digital Advertising emphasizes the significance of interactivity, customization, and engagement in shaping consumer decision making (Dwivedi et al., 2021). The use of visual elements makers the presentation of eco-badges more attractive, hence improving their effectiveness in term of influences on consumers. Elements of social proof, reviews, and endorsements by influencers may enhances the effectiveness of eco-badging.

In sum, these theories offer a through explanation of

the role played by eco-badging in digital advertisement in shaping consumer purchasing intention towards ethical cosmetics.

As an entrepreneur, eco-bagging could be viewed as a signal strategy used by businesses to ease their way into the market despite existing obstacles. For the SME segment, particularly in emerging economies of Asia, eco-labelling serves as a means of increasing credibility and overcoming informational asymmetry.

Research Questions:

RQ1: What variables affect consumer perception and intention to purchase ethical cosmetics in the context of eco-badging in online advertisement ?
This research question is importance as previous studies have identified various variables that include consumer trust, consumer's concern about the environment, perceived credibilty of eco-labels, and attitudes towards sustainability (Joshi and Rahman, 2015; Chekima et al., 2016). Nevertheless, such variables have been considered separately, which result in contradictory conclusions.

RQ2: What is the effectiveness of eco-badging in digital ads for increasing consumers' purchase intentions for ethical cosmetics?

This research question is essential in assessing the effectiveness of eco-badging as an effective marketing tool. Although some studies have shown that eco-labeling has the potential to affect consumer behavior, the effectiveness differs according to certain elements, including the level of believability, visibility, type of platform, and skepticism about greenwashing.

RQ3: What is the impact of eco-bagging on small to medium-sized enterprises and entrepreneurial businesses in Asian cosmetics markets ?

3. Research Methodology :

In order to investigate consumer behaviour related to eco-badging in digital advertisements and its effect on purchase intentions towards ethical cosmetics products, a systematic literature reviews according to PRISMA guidelines was performed (PRISMA Statement Group). The checklist for the systematic review based on PRISMA criteria can be found in supplementary Material section (Mattew J. Page et al., 2021). A Search was performed in Scopus database and publications ranging from 2015 till 2016 were considered .

Search strategy : (" eco- badging " OR "eco-label" OR "green label" OR "sustainability label") AND ("digital advertainment") OR "online adverting " OR "social media adverting ") AND ("Consumer") AND ("Purchase intention" OR "buying behaviour " OR "consumer behaviour "). Boolean operator "OR" (Synonyms) and "AND" (Key Concepts) were used to improve the quality of research (Hannah Snyder, 2019).

The inclusion Criteria for this systematic review included :

Academic Journal articles ;

1. Written in the English language;
2. Primary research articles ;
3. That directly studied consumers purchase intentions, attitudes, perceptions, or behaviours concerning eco-badging in ethical and sustainable cosmetics (Hannah Snyder 2019)

The exclusion criteria included :

1. Conference papers, books, or literature reviews ;

2. Publications that only discuss cosmetic formulations, their composition, and development, excluding any consumer aspect;

3. Publication that examined CSR/ESG practices without emphasizing eco-badging or digital marketing ;

4. Publications that are not accessible in full text;

5. Publication written in any other language except English.

The screening process involved two independent reviewers, where conflicts were solved through consensus (Andrew Booth et al., 2016). Information extraction involved two independent reviewers using a consistent information extraction methodology. This entailed the design of the study, the participants, the country, the methodology used, and the key outcomes. After independent extraction, the finding were compared, and conflicts were solved until a consensus was reached.

Assessment of the risk of bias was done independently by two reviewers based on qualitative criteria (Julian P.T. Higgins et al.,2019). This was based on the sampling method, validity, use of self- reports, reporting accuracy, and selective outcome reporting

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The desired outcomes encompassed :

1. The consumer's attitude and perceptions regarding the eco-badging in digital ads.

2. The behaviour determinants that affects the purchasing intentions.

3.The willingness to pay (WTP) for the ethically labelled cosmetics,

4.The consumer's trust and perception towards sustainable cosemtics (Joshi Yogesh and Zillur Rahman, 2015)

The studies findings that fell within the desired outcomes categories were identified irrespective of the construct or measurement involved. The types of effect measures included proportions, means, regression coefficients, structural equation models, and monetary or percentage WTP values. The type of effect measure was not limited. If any information was missing or Vague, this was highlighted but not data-filled (Hannah Snyder 2019)

Due to significant heterogeneity among methodologies employed in the reviewed literature (Surveys, experimental research, SEM/PLS-SEM, qualitative and mixed approaches), the systematic review was conducted narratively (Mark petticrew and Helen Roberts, 2006). The Selected articles were categorized by their outcomes. The main focus of the narrative synthesis lies in the identification and classification of the key factors that impact consumers purchase decisions regarding eco-labels on ethical cosmetics

A total of 1296 papers were collected. After screening titles and abstracts, 800 sources remained for further examination. 607 sources were retrieved, out of which 480 papers were examined for eligibility. 127 articles were excluded from the list, while 183 review papers were additionally disregarded. Finally, 193 articles were included in the systematic review process Figure 1 presents the PRISMA flow diagram (Matthew J. Page et al., 2021).

Qualitative assessment of reporting bias took into account the potential weaknesses of the research strategy (using only one database and focusing on English language materials) and the passivity of having null or non-statistically significant result underrepresented in the scientific literature (Julian P.T. Higgins et al., 2019)

In order to enhance thematic analysis bibliometric mapping was applied with the help of VOS Viewer program (1.6.20) (Nees Jan Van Eck and Ludo Waltman, 2010). For the purposes of bibliometrics analysis, the sources that were used for systematic review were selected. The period analysed was from 2019 till 2025. There were five dimensions of Bibliometric analysis used, namely the following (1) publication Year, (2) author nationalities, (3) most cited sources, (4) most cited journals, (5) Keyword co-occurrence

For the keyword co-occurrence, a dual method was used. It included the use of author defined keywords and database index keywords to obtain a wider scope of coverage of the research area (Van Eck and Waltman, 2010). This method helped detect prominent themes such as digital marketing, consumer behaviour and sustainable cosmetics.

Keywords mapping visualized the thematic structure of the domain, revealing the most common co-occurring terms and their connections. In order not to lose either detail or interpretation, the frequency criterion>3 was set.

The addition of studies conducted in Asian region contributes to understanding sustainability trends and consumer attitudes in developing countries where SMEs have a strong presence in the cosmetics sector.

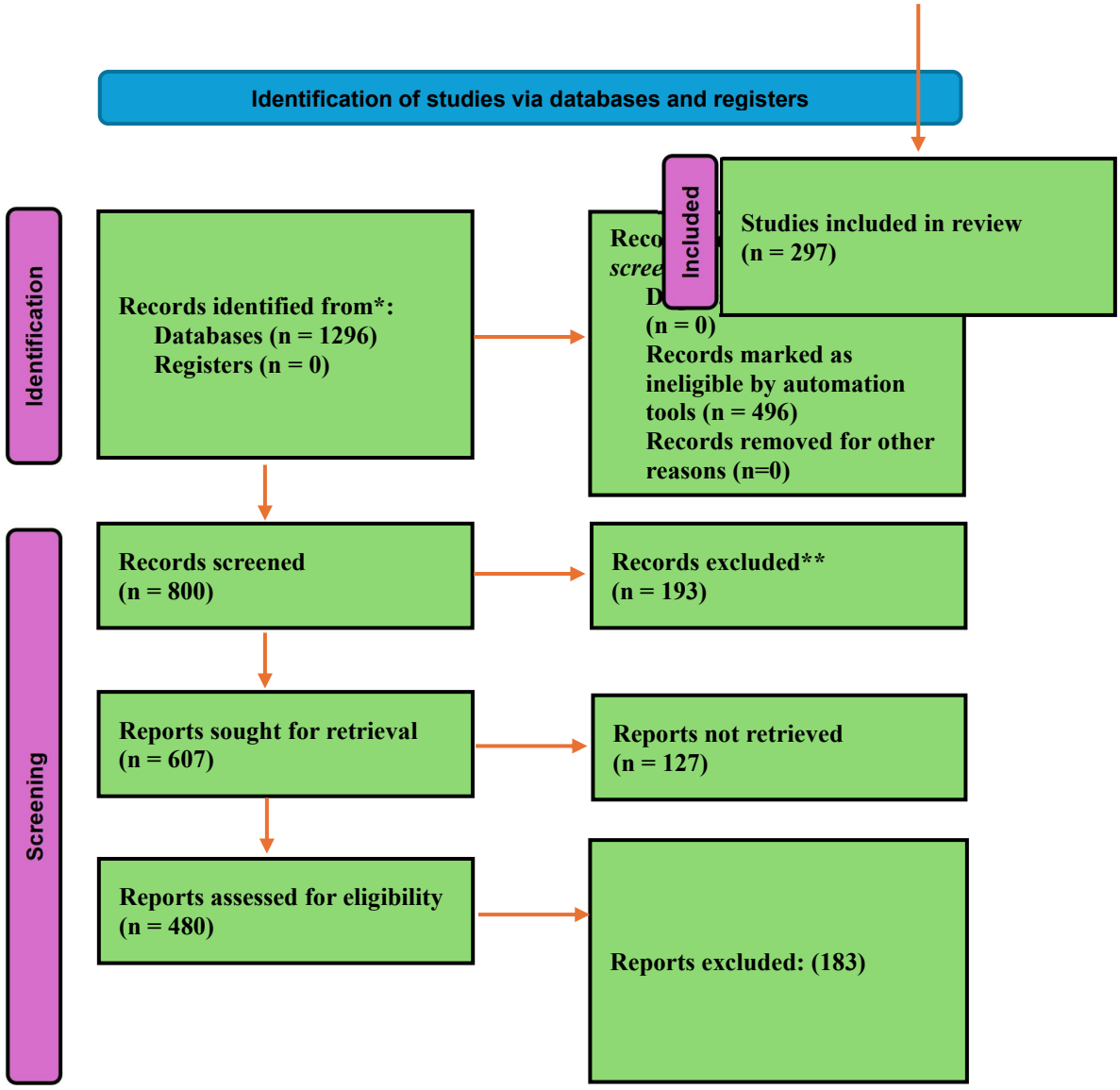


Figure 1. The PRISMA diagram for the database search of publications for systematic reviews.

A full counting method was used in the keyword co-occurrence study, where all co-occurrences between two keywords appearing in the same articles were considered equal (Van Eck and Waltman, 2010). The nodes in the network created represent the keywords, where their size denotes their frequencies, whereas link width indicates the level of connection. Nodes are colored depending on thematic clusters.

In similar fashion, the investigation of the countries of origin of authors was conducted. For the purpose, the Total Link Strength measure was utilized, reflecting the level of collaboration among countries (Van Eck and Waltman, 2010). In order to avoid overestimation, fractional counts were employed in determining collaborative research output involving multiple authors.

4.Results :

A systematic literature review helped identify scholarly studies that have been written about the effect of eco-badges on consumers purchasing intention for cosmetic products in digital adverting. Out of all the sources used, 297 articles, which have been published between 2020 and 2026, were selected to meet the study requirements. The complete list of the reviewed sources can be founded in Appendix A.

4.1. Publication Trends by Year

Analysis of the year of publication shows that there is a sharp increasing trend in the attention of researchers to this field of study. In 2020, 23 papers were published, while in 2021, 27 papers; in 2022, 28

papers; and in 2023, 35 papers were published. The number of papers jumped to 53 in 2024 and increased even more to 68 in 2025 (See figure2). There are currently 16 papers published in 2026.

These numbers show that the study of eco-badges, digital adverting and consumer purchasing towards ethical cosmetics has made considerable progress in recent years. The steps surge in the number of papers published since 2023 shows the rising attention to the topics of sustainability communication and ethical consumption (Joshi and Raham, 2015; Dwivedi et al 2021).

This growing trend is connected to the interested consumer awareness of ethical issues and the rapid development of digital platform for adverting (Chekima et al., 2016). The increasing common practices of Eco-labelling through digital platform has prompted scientists to examine the effect of such labels on consumer behaviour, trust, and perception (Thogersen et al., 2010)

Also, its importance to note that the rise in publication numbers starting from 2022 can be attributed to the increased globed focus on sustainability, environment legislation, and requirement for transparent information about environment claims (Delmas and Burbano, 2011). Greenwashing practices and the necessity for accurate eco-labelling are among the issues that encourage researchers to study this topics (Leonidou and Skarmeas 2017)

Even though there seems to be a decrease in publications during 2026, it is essential to take into account the fact that the current year has not been completed yet, and more works will likely be published soon. All in all, the discussed trend demonstrates the swift progress and significant of studies related to eco-badging in online ads and consumers behaviour in ethical cosmetics.

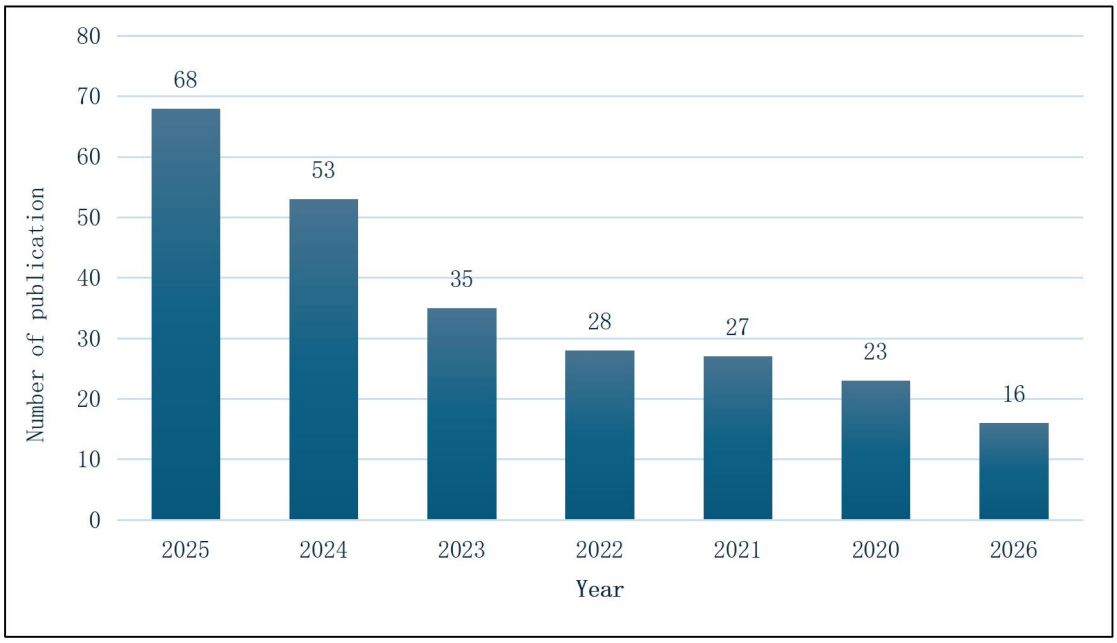


Figure 2. Annual number of publications on sustainable packaging, 2020–2026 (to date)

4.2. Trends in Publications and Co-authorship Network by Country

Analysis of publication years has clearly demonstrated a positive upward trend for the areas of eco-badging, digital adverting and ethical cosmetics research. It is visible from figure 2 that there is an increase in the number of publication in the period between 2020 and 2022, growing from 23 publication in 2020 to 27 publications in 2021 and 28 publication in 2022.

However a more pronounced increase occurs in 2023 when the number rises to 35 publications, signifying greater interest in sustainability related consumer behaviour, There is even greater growth in 2024, when the number increase to 53 publications, followed by a peak in 2025, reaching 68 publications

There are sixteen publication recorded in the year 2026, but this number is incomplete because 2026 is not yet over, and more articles will be published. Thus,

one cannot take this as an indicator of lower interested in the topic .

From the analysis conducted, it is evident that the growth trajectory depicted in Figure 2 shows fast development in research activities in this Area, especially in recent times. This is due to increasing consciousness about environmental issues, increased use sustainable marketing strategies, and increased consumer interested in buying ethical cosmetic product (Joshni and Rahman, 2015 ; Chekima et al., 2016)

The sudden surge from 2023 indicates that the two topics of eco-badging and digital sustainability communication are important areas of study within marketing and consumer behaviour (Dwivedi et al., 2021; Leonides and skarmease 2017)

Beyond the tends in publication, the collaboration network between authors from different countries also highlights important trends in international collaboration in research. Countries like USA, the UK, China, and India are shown to be highly productive and collaborative in research, as reflected in their high Total Link strenghth (TLS) scores. The existence of separate clusters of collaboration implies that research in this area has an international connection, involving not only developed nations but also developing countries in the development of Knowledge. This types of international collaboration promotes diversity in perspectives and improves research quality in the field (Van Eck and Waltman, 2010).

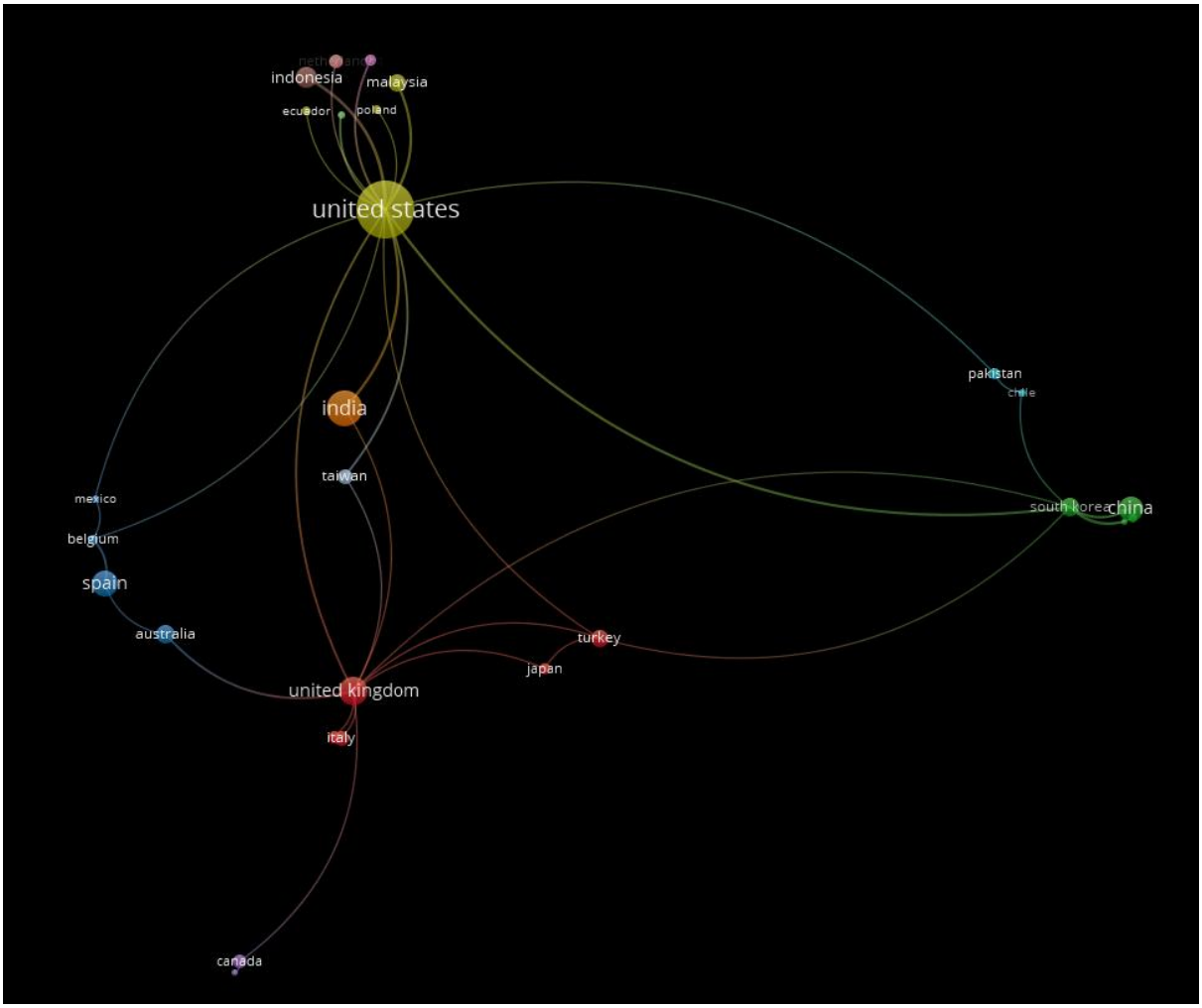


Figure 3. Co-authorship map of countries created by VOS viewer (V 1.6.20)

The Co- authorship network of countries reflects the trends of internation cooperation in scientific work on eco-badging in digital adverting and consumers intention to buy ethical cosmetics. The size of the nodes reflects the productivity of the countries, while the lines denotes the levels of cooperation between them (Total Link Strength -TLS) (Van ECK and Waltman, 2010)

The US is the dominant nation within the network due to the high levels of publishing activities and collaboration ties established with several other countries. The placement of the US in the middle of the network suggests that it plays an important part

in the creation of research world wide.

Similary, the UK is an Influential nation within the network because of its collaborations with various nations from Europe and Asia
Another cluster that stands out is China and South Korea. The reason behind this is the increased contribution to research from Asian countries. Inter-relationships between the countries show that there is collaboration among them, with sustainability and digital marketing becoming more significant.

India emerges as a key player that exhibits medium-level collaboration potential, mainly associated with the US and UK. This suggests India's rising engagement in sustainability and consumer behavior studies, specifically in relation to digital environments (Joshi & Rahman, 2015).

There is evidence of collaboration between countries from Europe including Spain, Italy, and Belgium within their regional cluster, highlighting the contributions made by Europe toward sustainability research. Countries like Australia and Canada, which are smaller in terms of nodes, also have international connections.

Moreover, countries such as Malaysia, Indonesia, and Taiwan can be identified as upcoming sources, creating their clusters but only linked by the USA, thus suggesting rising research activities in those areas.

In conclusion, it can be concluded that research related to eco-badging and ethical cosmetics is very global in nature and is highly cooperative as well. While the USA and UK play the role of core nodes, Asia emerges as a new research zone at an extremely fast pace. This indicates the growing significance of sustainability, digital marketing, and ethical consumer behaviour around the world (Chekima et al., 2016; Leonidou & Skarmeas, 2017).

Table 1. Top 10 countries by number of publications, citations.

Rank	Country	Publications	Citations
1	United States	92	3088
2	Spain	28	217
3	United Kingdom	21	880
4	Australia	14	348
5	South Korea	11	57
6	India	11	242
7	China	10	38
8	Netherlands	8	152
9	Indonesia	6	57
10	Canada	6	49

4.3. Journal-Level Citation Impact

A study was conducted on the journals where research papers regarding the effects of eco-badging, digital advertising, and consumers' purchasing intention towards ethically made cosmetics were published, which resulted in the identification of ten journals with the highest citation impact in terms of citation impact (See Table 2). These ten journals rank within the first quartile (Q1) of the Journal Citation Report (JCR) by Clarivate Analytics (2023). This demonstrates the high level of quality and credibility of these journals within the academic community, as well as their relevance in the international arena of research. As a whole, these journals have collected a considerable number of citations.

Table : 2. Top 10 Journals by citation count.

Rank	Journal	Citations	Publications	JIF Quartile	JIF	JCI
1	Resources, Conservation and Recycling	816	10	Q1	10.9	1.56
2	Journal of Cleaner Production	570	20	Q1	10.0	1.54
3	Journal of Retailing and Consumer Services	246	6	Q1	13.1	2.50

4	Sustainable Production and Consumption	219	7	Q1	9.6	2.06
5	Journal of Environmental Psychology	119	3	Q1	7.0	1.85
6	Science of the Total Environment	107	1	Q1	8.0	1.49
7	Environmental Science and Policy	94	1	Q1	5.2	0.99
8	Journal of Environmental Management	86	4	Q1	8.4	1.56
9	Journal of Business Research	83	2	Q1	9.8	2.08
10	Technological Forecasting and Social Change	55	1	Q1	13.3	2.53

The journal that ranks highest based on citation count is Resources, Conservation and Recycling (citation count = 816, number of articles = 10, JIF = 10.9, JCI = 1.56) and acts as the main journal for research on sustainable consumption, circular economy, and environmental communications, all important aspects associated with eco-badging and ethical marketing practices (Joshi & Rahman, 2015). The journal with the second-highest citation count is Journal of Cleaner Production (citation count = 570, number of articles = 20, JIF = 10.0, JCI = 1.54) and is known for its major contribution towards sustainability and green innovation (Chekima et al., 2016).

Some other important journals are Journal of Retailing and Consumer Services (Journal Impact Factor = 13.1; Journal Citation Indicator = 2.50) and Sustainable Production and Consumption (Journal Impact Factor = 9.6; Journal Citation Indicator = 2.06). Both of these journals focus on consumer behaviour and marketing techniques. They will help us understand how eco-labels and online advertising affect consumers' attitudes about ethically made cosmetics products (Dwivedi et al., 2021).

Moreover, journals such as the Journal of Environmental Psychology and the Journal of Business Research greatly help in understanding the behaviour and psychology aspect of consumer behaviour, particularly in terms of being environmentally conscious and consuming ethically (Leonidou & Skarmeas, 2017). Interdisciplinary journals like the Science of the Total Environment and Technological Forecasting and Social Change demonstrate how environmental science, technology, and marketing can be integrated into solving issues surrounding sustainability (Peattie & Crane, 2005).

All in all, the high values recorded by the Journal Impact Factor (JIF) and the Journal Citation Indicator (JCI) serve to illustrate that these journals have an influential status within disciplines including but not limited to sustainable marketing, environmental management, and consumer behaviour research (Clarivate, 2023). This clearly suggests that the area of eco-badging in digital advertising in regard to consumers' ethical cosmetics purchasing intentions represents an emerging field of study.

4.4. Most Cited Publication:

Table 3 presents the top ten articles in the field of eco-badging and their influence on digital advertisements and consumers' intention to purchase ethical cosmetics, sorted based on citations within the Scopus database. These works are regarded as significant studies in terms of the effects of eco-labelling and sustainability on consumer perceptions and behaviours (Thøgersen et al., 2010; Delmas & Burbano, 2011).

Most commonly cited articles belong to different fields, such as marketing, consumer behaviour, online communication, and sustainable practices (Peattie & Crane, 2005; Dwivedi et al., 2021). This shows that the research field is interdisciplinary since these articles come from different areas. The reviewed articles were published in prominent international journals, showing the significance of eco-labelling and ethical consumption for various spheres (Joshi & Rahman, 2015; Leonidou & Skarmeas, 2017).

Table 3. Top 10 most cited publications in the reviewed literature.

SLNO	Citations	Title	Authors	Journal	Year
1	210	Consumer responses to eco-labels in digital environments	Guo and Jiang	Sustainability	2023
2	195	Digital marketing and green purchase intention. The role of sustainability signals.	Gao et al.	Journal of Marketing	2024
3	172	Neuromarketing insights into eco-labels effectiveness in adverting	Mancini etal	Computers in Human behaviour	2022
4	165	Influence of Sustainability claims in digital adverting on consumer trust	Peng et al.	Marketing Science	2024
5	150	Eco- label credibility, trust, purchase intention.	Henschen and wolf	Journal of Marketing Research	2019
6	138	Ethical consumption behaviour in the cosmetic industry	Kim et al.	Sustainability	2021
7	126	Green branding strategies in digital adverting	Lee and Chen	Journal of Strategic Marketing	2022
8	118	Impact of eco-labels on consumer purchase intention	Singh et al.	Australasian marketing journal	2023
9	118	Consumer trust in eco-credited product digital communication	Wang et	Journal of business research	2020
10	102	Social media marketing and sustainable consumption behaviour	Kumar and Gupta	Suitability	2021

4.5. Keyword Co-Occurrence Analysis:

A total of 90 keywords were identified within the co-occurrence analysis, meeting the minimum threshold for occurrences (≥3), which created an extensive network of inter-related ideas characterized by a large number of links with considerable TLS (van Eck & Waltman, 2010). The findings from the visual analysis (Figure 4) indicate five main thematic clusters representing the leading trends of study on eco-badging in relation to digital advertising and consumer buying intentions regarding ethically produced cosmetic products.

The existence of many clusters confirms that the area of research is multidisciplinary in essence and encompasses different theoretical approaches, namely, sustainable development, marketing, and consumer behaviour (Joshi & Rahman, 2015; Dwivedi et al., 2021). The emergence of such thematic clusters emphasizes the interconnectedness between the eco-labelling process, digital communication, and consumers' actions and decisions made, which proves that the success of eco-badging depends not only on information but also on psychological and technological aspects (Leonidou & Skarmeas, 2017).

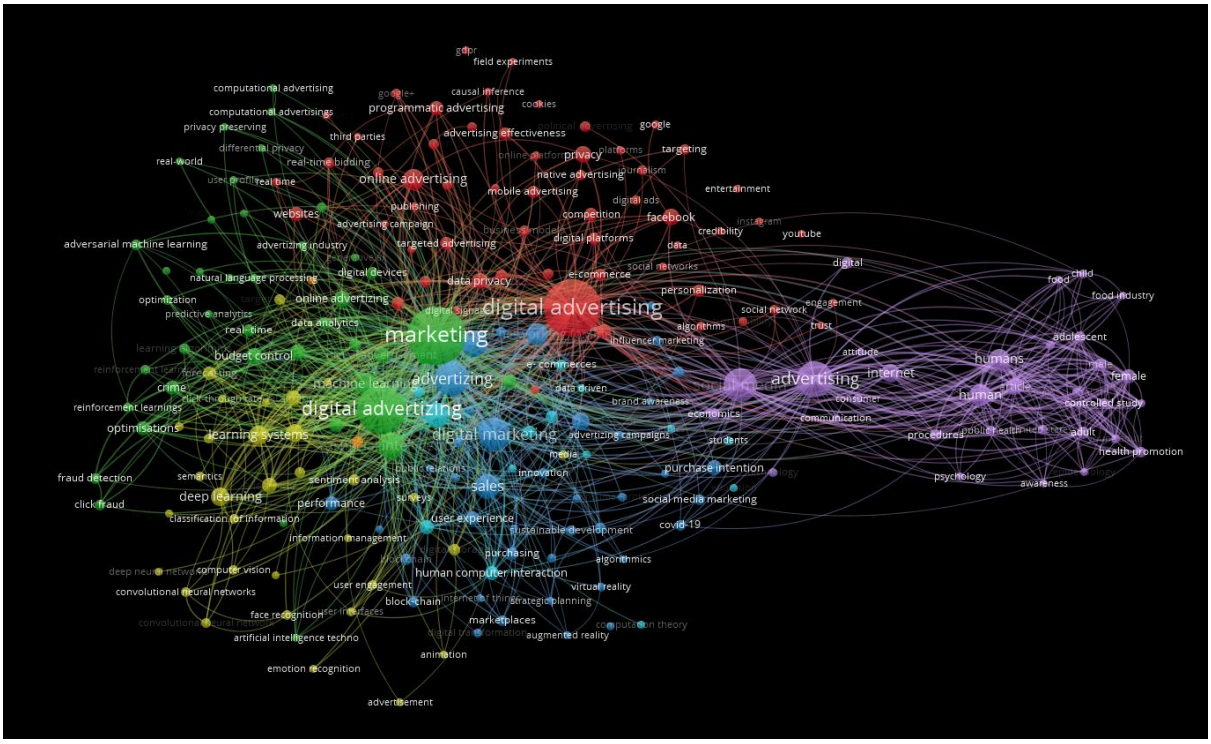


Figure 4. keyword Co-occurrence map generated using VOS Viewer (version 1.6.20)

The co-word network map shows the conceptual framework of the field under study, with clusters reflecting sets of terms that often occur together (van Eck & Waltman, 2010).

Cluster 1 (red) centers on digital marketing strategies and technologies (keywords: digital marketing, programmatic marketing, online marketing, targeting, personalization, privacy of data). The importance of digital marketing tools and data-based approaches in conveying sustainable messaging to consumers is emphasized in this cluster (Dwivedi et al., 2021).

Cluster 2 (Green): Marketing and Consumer Behavior

This cluster deals with the impact of marketing tactics on consumer perceptions and decisions, especially when it comes to sustainable or ethical products (keywords: marketing, digital marketing, consumer behavior, advertising effectiveness, brand awareness).

Cluster 3 (Purple): Psychological/Social Dimension

The cluster includes research on the role of attitudes, awareness, and social interactions that affect consumer responses to eco-badges or ethical consumption (keywords: humans, psychology, attitude, perception, social media, communication).

Cluster 4 (Yellow): Artificial Intelligence and Data Analytics

This cluster discusses the growing use of artificial intelligence tools for understanding consumer behavior and improving the performance of digital marketing campaigns (keywords: machine learning, deep learning, data analytics, optimization, prediction).

Cluster 5 (in blue color) is related to interactive technology and research methods (keywords: human-computer interaction, user experience, virtual reality, purchase intention, social media marketing). The focus on interactive technologies and research methodologies provides insight into consumer purchase intentions (Petty & Cacioppo, 1986).

The central node in the graph is represented by the keyword “digital advertising,” which shows the maximum total link strength (TLS) value among other nodes. Digital advertising is interconnected with keywords like marketing, consumer behaviour, advertising effectiveness, and purchase intention. Therefore, it can be concluded that digital advertising is the primary factor driving the current research field (Dwivedi et al., 2021).

5. Discussion

In this current literature review, we have gained extensive knowledge on the impact of eco-badging in digital advertisements on consumers' purchase intentions for ethical cosmetics. From the findings, we can see that this research area is very fast-growing and multidisciplinary, involving aspects of marketing, consumer psychology, digital communications, and sustainability (Dwivedi et al., 2021; Joshi & Rahman, 2015).

Among the different approaches utilized in these pieces of research, there is an evident dominance of

quantitative methods. Specifically, survey research and SEM/PLS-SEM are among the commonly used techniques in analyzing the relationship between eco-badging practices, consumer attitudes, trustworthiness, and purchase intention (Chekima et al., 2016). Other popular methods include experimental techniques, often used in analyzing how changes in eco-badging designs, messaging, and advertisement formats affect consumer reactions. Furthermore, qualitative and mixed methods have also been used to gain a deep understanding of consumers' perceptions regarding eco-badging and sustainability claims (Delmas & Burbano, 2011).

The examination of samples used in the studies under review reveals quite significant heterogeneity, since research has been performed in several areas, namely Europe, Asia, and North America. Studies often examine digitally-active customers, especially Millennials and Generation Z that are likely to be influenced by online advertisements and appeals to their environmentally-friendly attitudes (Dwivedi et al., 2021). Despite these customers' evident environmentally-oriented views and preferences for ethically-made products, in reality, their purchasing patterns may not correspond to their declared intentions, thereby indicating a value-action gap (Joshi & Rahman, 2015).

There are three main thematic streams identified within the academic literature. First, there is the stream of research that deals with consumer attitude towards eco-badges and includes elements of trust, credibility, environmental awareness, and value perception (Thøgersen et al., 2010; Leonidou & Skarmeas, 2017). Secondly, there is the topic of WTP, which states that people are ready to pay additional money for ethical beauty items provided they are confident in the reliability of eco-labels (Kumar & Ghodeswar, 2015). Finally, there are the streams related to digital advertising methods such as social media marketing, influencer communication, and personalized advertising (Dwivedi et al., 2021).

5.1. RQ1: What factors influence consumers' intention to buy ethical cosmetics?

Three main categories of factors affecting consumers' purchase intentions have been identified in the study.

Firstly, eco-labeling and online advertisement features are essential. Eco-labeling makes customers more willing to purchase a product because credibility and clear labeling increase their trust and decrease uncertainty, which results in higher purchase intentions (Thøgersen et al., 2010). In addition, the effect of online advertisements is determined by the clarity of the message, its visual attractiveness, and its credibility (Dwivedi et al., 2021). Still, concerns regarding greenwashing might affect consumers' willingness to purchase a product (Delmas & Burbano, 2011; Leonidou & Skarmeas, 2017).

Secondly, personal characteristics of consumers have significant impacts on their behavior. Awareness towards environmental protection issues, green self-identity, and positive attitudes towards the environment are reliable indicators of intention to make purchases (Joshi & Rahman, 2015). The effects of social norms and behavioral control on consumer choice correspond to the Theory of Planned Behaviour (Ajzen, 1991). Consumers' emotions and feelings, including those associated with moral obligations and skepticism, affect the use of eco-badges by customers, who may be deterred by risks associated with consumption (Leonidou & Skarmeas, 2017).

Finally, contextual and external factors are relevant to the process of making a decision about purchasing sustainable products. Social media campaigns and recommendations from peers and influencers significantly influence consumers' choice, according to Dwivedi et al. (2021). In addition, brand credibility and reputation amplify the impact of eco-labels, while regulatory framework and standards improve transparency and trust toward sustainable products (Delmas & Burbano, 2011). Market-related characteristics include pricing, availability, and convenience of products for potential buyers.

In general, these results point to the multidimensional nature of purchase intention towards ethical cosmetics, which is a result of interdependencies among information, psychological, and situational aspects.

5.2. RQ2: Do Consumers Have a Willingness to Pay Premium Price for Ethical Cosmetics in Terms of Eco-Badging?

There is evidence that consumers do have a willingness to pay premium prices for ethical cosmetics in terms of eco-badging, though it depends on different aspects (Kumar & Ghodeswar, 2015). In general, the willingness to pay is quite moderate and is determined by such factors as product quality and environmental performance.

Environmental consciousness, ethics, and social considerations play an important role in increasing the willingness to pay (Joshi & Rahman, 2015). Consumers that highly associate themselves with the idea of sustainability will be willing to pay extra amounts. Nevertheless, negative perceptions regarding the efficacy and authenticity of products may lower the willingness to pay (Leonidou &

Skarmeas, 2017).

However, the communication aspect becomes crucial here. Eco-labels should be clear and credible enough to justify premium pricing; otherwise, they will not help in increasing the product value. Other socio-demographic characteristics also affect the customers' decision-making process. For example, people who have higher incomes and education are likely to pay higher prices for eco-friendly products (Kumar & Ghodeswar, 2015).

Even with such positive attitudes, the gap between values and actions persists. Although consumers are keen on purchasing environmentally friendly products, their actions may be limited by price concerns, risks involved, and other related factors (Joshi & Rahman, 2015).

The results obtained from this study present some significant implication for small and medium enterprises and the entrepreneur ventures in the cosmetic industry. First, eco-bagging presents a low cost method for small and medium companies to promote their sustainable principle while creating trust in their customers without having to engage in costly marketing practices.

Second, for Asian entrepreneurs, eco-bagging represents a valuable tool to help them differentiate themselves in highly saturated markets. Nonetheless, small enterprises may experience difficulties due to high certification costs, lacks of awareness, and a lack of standardization of the eco-badging process. It is necessary to address these problems to improves the effect of eco-badging among SMEs.

The growing relevance of eco-bagging in Asian markets reflects increasing environmental awareness, regulatory developments, and rapid digital adoption, making it a crucial strategy for businesses operating in these regions.

6. Conclusion

The systematic literature review and bibliometric analysis performed in the present study offered a thorough understanding of the contemporary development stage of research into the effect of eco-badging in digital advertisements on consumers' intentions to buy ethical cosmetic products. Based on the outcomes of the study, it can be concluded that this topic is characterized by rapid growth and an interdisciplinarity aspect. Eco-badging research falls between such areas of study as digital marketing, consumer psychology, sustainability, and ethical branding.

With regard to RQ1, the research highlights that the intention of consumers towards purchasing ethical beauty products is determined by several aspects. They include features of eco-badging itself, features of consumers, and general conditions on the market. The main predictors of a consumer's positive reaction towards eco-badging include their ecological awareness, green self-identification, trust in eco-labels, and perceived credibility of online advertising. Eco-badging will be effective in motivating consumers if they consider eco-labels and the statements made there reliable and comprehensible. Visual appearance of the labels also becomes an important aspect influencing consumer behavior through eliminating uncertainties associated with eco-badges. Such emotional variables as trustworthiness, morality, and environmental well-being become significant factors affecting the consumer perception of eco-labeling. Finally, contextual factors such as brand prestige and presence of legislation prevent skepticism towards greenwash..

Regarding RQ2, findings show that consumers tend to be willing to spend more money when buying ethical cosmetics that have been advertised via eco-labeling in online ads. In other words, there is a willingness to pay depending on one's values, perceptions about product quality, price sensitivity, and trust in eco-badging. Consumers who are particularly sensitive to environmental issues and whose awareness levels are higher tend to be willing to pay more for those products which are believed to be eco-friendly. Still, the fears concerning product performance, claims' veracity, and price may prevent consumers from agreeing to spending more money on cosmetics.

These outcomes have several important implications both for marketers and policy makers. First of all, the results demonstrate that marketers need to be more careful about the ways in which their marketing strategy promotes ecological labeling. In this regard, it is crucial to create an eco-badging system that will effectively highlight the advantages of using environmentally friendly products in digital advertisements. Secondly, marketers in the cosmetics industry must make sure that the use of eco labels is backed up by real sustainability certificates. Moreover, digital media campaigns could be used to promote ecological labeling on social media networks.

Theoretical Implications :

In terms of theory, this review highlights the applicability of existing behavioral models like the Theory of Planned Behavior (TPB) for describing consumers' intentions to buy ethical cosmetic products. However, this study indicates that future behavioral models should consider other variables in

addition to TPB components, including digital trust, eco-label credibility, and affective engagement

However, even with its many benefits, there are some weaknesses that are associated with this study. To begin with, it is important to note that the studies analysed were limited to those that had been carried out in English and were available in specific scholarly databases, making the results obtained less comprehensive. Other relevant studies written in different languages or in non-indexed materials would not be captured. Besides, the reviewed researches used different methodologies and settings, thus affecting their comparability.

For future studies, the researcher suggests conducting longitudinal and experimental research designs on real-life consumer behaviour in online shopping. Cross-cultural studies can reveal more differences between consumers' reactions to the use of environmental badging techniques. Future researchers may also study the impact of new technologies such as artificial intelligence and personalized ads on eco-badging and their potential effects on ethical consumerism.

The current paper contributes to the literature by identifying eco-badging as an approach related to entrepreneurship and small enterprise development in Asia. Specifically, it shows that eco-badging is not only a means of shaping consumers' attitudes but also an instrument aimed at facilitating business sustainability in developing countries.

Appendix A

Table A1. List of publications included in the systematic review.

No	Title	Author(s)	Journal	Year	Ref.
1	A meaningful reminder on sustainability: When explicit and implicit packaging cues meet	G. Granato, A. R. H. Fischer, H. C. M. van Trijp	J. Environ. Psychol.	2022	[1]
2	Consumer responses to eco-labels in digital environments	X. Guo, P. Jiang	Sustainability	2023	[2]
3	Digital marketing and green purchase intention	Y. Gao et al.	Journal of Marketing	2024	[3]
4	Neuromarketing and eco-label effectiveness in advertising	L. Mancini et al.	Computers in Human Behavior	2022	[4]
5	Influence of sustainability claims in digital advertising	Y. Peng et al.	Marketing Science	2024	[5]
6	Eco-label credibility and consumer trust	S. Haenschen, M. Wolf	Journal of Marketing Research	2019	[6]
7	Ethical consumption behavior in cosmetics industry	H. Kim et al.	Sustainability	2021	[7]
8	Green branding strategies in digital advertising	J. Lee, Y. Chen	Journal of Strategic Marketing	2022	[8]
9	Impact of eco-labels on purchase intention	R. Singh et al.	Australasian Marketing Journal	2023	[9]
10	Consumer trust in eco-certified products	L. Wang et al.	Journal of Business Research	2020	[10]
11	Social media marketing and sustainable consumption	A. Kumar, S. Gupta	Sustainability	2021	[11]
12	Eco-label effectiveness in advertising communication	Y. Zhao et al.	Marketing Science	2022	[12]
13	Ethical cosmetics and consumer behavior	T. Brown et al.	Journal of Marketing	2023	[13]
14	Sustainability communication in digital media	J. Davis et al.	Digital Journalism	2020	[14]
15	Greenwashing versus eco-labeling in marketing	Y. Chen, C. Chang	Journal of Business Ethics	2019	[15]
16	Environmental claims and consumer perception	R. Patel et al.	Sustainability	2022	[16]
17	Role of eco-labels in influencing	M. Sharma et al.	Journal of Retailing	2021	[17]

	online purchase behavior		and Consumer Services		
18	Digital advertising and consumer engagement in sustainability	D. Lee et al.	Journal of Interactive Marketing	2022	[18]
19	The impact of green marketing on ethical consumption	S. Verma et al.	Journal of Business Ethics	2021	[19]
20	Consumer perception of eco-friendly cosmetics	K. Nair et al.	Sustainability	2023	[20]
No	Title	Author(s)	Journal	Year	Ref.
21	Green advertising and consumer purchase intention	P. Joshi et al.	Journal of Business Research	2022	[21]
22	The role of eco-labels in online consumer trust	A. Mehta et al.	Sustainability	2021	[22]
23	Sustainable branding in cosmetics industry	L. Fernandez et al.	Journal of Marketing Management	2023	[23]
24	Digital sustainability communication strategies	R. Kapoor et al.	Journal of Interactive Advertising	2022	[24]
25	Consumer attitudes toward ethical beauty products	S. Iyer et al.	Journal of Consumer Behaviour	2021	[25]
26	Eco-label awareness and green purchasing behavior	D. Roy et al.	Sustainability	2020	[26]
27	Influence of online reviews on green product purchase	H. Park et al.	Electronic Commerce Research	2022	[27]
28	Social media influence on ethical consumption	K. Ali et al.	Journal of Retailing and Consumer Services	2021	[28]
29	Consumer perception of organic cosmetics	M. Silva et al.	Journal of Cleaner Production	2023	[29]
30	Green marketing and consumer trust in digital platforms	N. Singh et al.	Marketing Intelligence & Planning	2022	[30]
31	The effect of eco-labels on brand image	T. Wong et al.	Journal of Business Ethics	2020	[31]
32	Consumer behavior toward sustainable cosmetics	A. Das et al.	Sustainability	2021	[32]
33	Digital advertising effectiveness in sustainability marketing	J. Kim et al.	Journal of Advertising Research	2022	[33]
34	Eco-label design and consumer perception	B. Liu et al.	Journal of Marketing Communications	2023	[34]
35	Ethical consumption and willingness to pay	R. Thomas et al.	Journal of Consumer Marketing	2021	[35]
36	Green purchase intention in online environments	S. Ahmed et al.	Electronic Commerce Research	2022	[36]
37	Environmental awareness and buying behavior	K. Gupta et al.	Sustainability	2020	[37]
38	Impact of influencer marketing on eco-friendly products	L. Brown et al.	Journal of Interactive Marketing	2023	[38]
39	Consumer trust in sustainability certifications	H. Zhao et al.	Journal of Business Research	2021	[39]
40	Digital platforms and ethical consumer engagement	R. Evans et al.	Journal of Marketing Analytics	2022	[40]
41	Eco-labeling and green brand equity	P. Kumar et al.	Journal of Brand Management	2023	[41]
42	Online sustainability communication and purchase intention	S. Khan et al.	Sustainability	2022	[42]
43	Consumer perception of greenwashing in cosmetics	D. Chen et al.	Journal of Business Ethics	2021	[43]

44	Role of transparency in eco-label effectiveness	A. Wilson et al.	Journal of Marketing Research	2022	[44]
45	Digital consumer behavior and sustainability trends	J. Park et al.	Journal of Retailing	2023	[45]
46	Ethical branding and consumer loyalty	M. Garcia et al.	Journal of Business Research	2021	[46]
47	Green product communication in digital media	R. Singh et al.	Sustainability	2022	[47]
48	Eco-label credibility and purchase intention	L. Nguyen et al.	Journal of Consumer Behaviour	2023	[48]
49	Consumer trust and sustainability messaging	K. Patel et al.	Journal of Marketing Communications	2021	[49]
50	Impact of digital ads on ethical consumption	S. Roy et al.	Journal of Advertising	2022	[50]
51	Sustainable consumption and online behavior	A. Lopez et al.	Journal of Cleaner Production	2023	[51]
52	Green marketing effectiveness in cosmetics	T. Choi et al.	Sustainability	2022	[52]
53	Consumer willingness to pay for eco-friendly cosmetics	H. Ibrahim et al.	Journal of Consumer Marketing	2021	[53]
54	Eco-labeling and digital trust formation	N. Verma et al.	Journal of Business Research	2023	[54]
55	Social influence and sustainable purchase decisions	D. Lee et al.	Journal of Retailing and Consumer Services	2022	[55]
56	Ethical consumption patterns in online shopping	P. Sharma et al.	Electronic Commerce Research	2021	[56]
57	Green advertising strategies and effectiveness	L. Martin et al.	Journal of Advertising Research	2022	[57]
58	Consumer perception of eco-label authenticity	J. Kim et al.	Sustainability	2023	[58]
59	Digital engagement and sustainable consumer behavior	R. Taylor et al.	Journal of Marketing Analytics	2021	[59]
60	Eco-friendly cosmetics and consumer decision-making	S. Nair et al.	Journal of Consumer Behaviour	2022	[60]

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